

SECTION 16195

ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Extent of electrical identification is indicated by drawings and schedules.
- B. See 'Electrical Equipment Identification Schedule' on drawings for extent of equipment to be labeled and label verbiage.
- C. Types of electrical identification specified in this section include the following:
 - 1. Buried cable warnings.
 - 2. Electrical power, control and communication conductors.
 - 3. Operational instructions and warnings.
 - 4. Danger signs.
 - 5. Equipment/system identification signs.
- D. Refer to Division 1 General Requirements Section, Identification Systems, for equipment and system nameplates and performance data; not work of this section.

PART 2 - PRODUCTS

2.1 ELECTRICAL IDENTIFICATION MATERIALS

- A. General: Except as otherwise indicated, provide manufacturer's standard products of categories and types required for each application. Where more than one (1) single type is specified for an application, selection is Installer's option, but provide single selection for each application.
- B. Plasticized Tags:
 - 1. General: Manufacturer's standard pre-printed or partially pre-printed accident-prevention and operational tags, of plasticized card stock with matte finish suitable for writing, approximately 3-1/4-inch x 5-5/8-inch, with brass grommets and wire fasteners, and with appropriate pre-printed wording including large-size primary working, e.g., DANGER, CAUTION, DO NOT OPERATE.
- C. Self-Adhesive Plastic Signs:
 - 1. General: Provide manufacturer's standard, self-adhesive or pressure-sensitive, pre-printed, flexible vinyl signs for operational instructions or warnings; of sizes suitable for application areas and adequate for visibility, with proper wording for each application, e.g., 208V, EXHAUST FAN, RECTIFIER.
 - a. Colors: Unless otherwise indicated or required by governing regulations, provide orange signs with black lettering.

D. Baked Enamel Danger Signs:

1. General: Provide manufacturer's standard "DANGER" signs of baked enamel finish on 20-gage steel; of standard red, black and white graphics; 14-inch x 10-inch size except where 10-inches x 7-inches is the largest size which can be applied where needed, and except where larger size is needed for adequate vision; with recognized standard explanation wording, e.g., HIGH VOLTAGE, KEEP AWAY, BURIED CABLE, DO NOT TOUCH SWITCH.

E. Engraved Plastic-Laminate Signs:

1. General: Provide engraving stock melamine plastic laminate, complying with FS L-P-387, in sizes and thicknesses indicated, engraved with engraver's standard letter style of sizes and wording indicated, black face and white core (letter color) except as otherwise indicated, punched for mechanical fastening except where adhesive mounting is necessary because of substrate.
 - a. Thickness: 1/16-inch, for units up to 20 sq. in. or 8-inch length; 1/8-inch for larger units.
 - b. Fasteners: Double sided tape, except contact-type permanent adhesive where tape will not adhere to surface.
 - c. Label size at 'Load' to be 2 1/2" x 4" label size at breaker to be 1" x 2 1/2".

F. Color-Coded Conduit Markers:

1. General: Provide manufacturer's standard pre-printed, flexible or semi-rigid, permanent, plastic-sheet conduit markers, extending 360° degrees around conduits; designed for attachment to conduit by adhesive, adhesive lap joint of marker or matching adhesive plastic tape at each end of marker, or pretensioned snap-on. Except as otherwise indicated, provide lettering which indicates voltage of conductor(s) in conduit. Provide 8-inch minimum length for 2-inch and smaller conduit, 12-inch length for larger conduit.
 - a. Colors: Unless otherwise indicated or required by governing regulations, provide orange markers with black letters.

2.2 LETTERING AND GRAPHICS

- A. General: Coordinate names, abbreviations and other designations used in electrical identification work, with corresponding designations shown, specified or scheduled. Provide numbers, lettering and wording as indicated or, if not otherwise indicated, as recommended by manufacturers or as required for proper identification and operation/maintenance of electrical systems and equipment. Comply with ANSI A13.1 pertaining to minimum sizes for letters and numbers.

PART 3 - EXECUTION

3.1 APPLICATION AND INSTALLATION

A. General Installation Requirements:

1. Install electrical identification products as indicated, in accordance with manufacturer's written instructions and requirements of NEC.

2. Coordination: Where identification is to be applied to surfaces, which require finish, install identification after completion of painting.
3. Regulations: Comply with governing regulations and requests of governing authorities for identification of electrical work.

B. Operational Identification and Warnings:

1. General: Wherever reasonably required to ensure safe and efficient operation and maintenance of electrical systems, and electrically connected mechanical systems and general systems and equipment, including prevention of misuse of electrical facilities by unauthorized personnel, install self-adhesive plastic signs or similar equivalent identification, instruction or warnings on switches, outlets and other controls, devices and covers of electrical enclosures. Where detailed instructions or explanations are needed, provide plasticized tags with clearly written messages adequate for intended purposes.

C. Danger Signs:

1. General: In addition to installation of danger signs required by Governing regulations and authorities, install appropriate danger signs at locations indicated and at locations subsequently identified by Installer of electrical work as constituting similar dangers for persons in or about Project.
 - a. High Voltage: Install danger signs wherever it is possible, under any circumstances, for persons to come into contact with electrical power of voltages higher than 250-volts.
 - b. Critical Switches/Controls: Install danger signs on switches and similar controls, regardless of whether concealed or locked up, where untimely or inadvertent operation (by anyone) could result in significant danger to persons, or damage to or loss of property where instructed by Architect.

D. Equipment/System Identification:

1. General: Install engraved plastic-laminate sign on each major unit of electrical equipment in building; including central or master unit of each electrical system including communication/control/signal systems, unless unit is specified with its own self-explanatory identification or signal system. Signs for disconnect switches, motor starters, contactors and similar equipment shall indicate the load served. Except as otherwise indicated, provide single line of text, 1/2-inch high lettering on 1-1/2-inch high sign (2-inch high where two (2) lines are required), white lettering in black field. Lettering for emergency power system components shall be white lettering in red field. Provide text matching terminology and numbering of the Contract Documents and shop drawings. Provide signs for each unit of the following categories of electrical work.
 - a. Panelboards, electrical cabinets and enclosures.
 - b. Access panel/doors to electrical facilities.
 - c. Major electrical switchgear.
 - d. Disconnect switches.
 - e. Motor control centers.
 - f. Motor starters.
 - g. Contactors.

- h. Power transfer equipment.
 - i. Transformers.
- 2. Install signs at locations indicated or, where not otherwise indicated, at location for best convenience of viewing without interference with operation and maintenance of equipment. Secure to substrate with fasteners, except use adhesive where fasteners should not or cannot penetrate substrate.

E. Cable/Conductor Identification:

- 1. General: Apply cable/conductor identification in each box/enclosure/cabinet, except where another form of identification (such as color-coded conductors) is provided. Match identification with marking system used in distribution switchboards, shop drawings, contract documents, and similar previously established identification for project electrical work.

END OF SECTION

BJ/1J Electrical Equipment Label Schedule

LABEL INSTALLED BY	LOCATION	LABEL AT LOAD	LABEL AT BREAKER	CKT NO.
Contractor	Sub BJ 15 kV SW	Switch BJ Fed from SAC 4B		
Contractor	Transformer	Sub BJ 1000 KVA		
Contractor	Distribution Swbd. BJ	Distr. Switchboard BJ Fed from Sub BJ		
Contractor			Main Fed from Sub BJ	MBJ
Contractor			Tie Fed from Panel 1J	BJ/1J
Contractor		MCC BJ Fed from Dist. Swbd. BJ	MCC BJ Room BJ15	BJ1
Contractor		BJ UPS Input Fed from Dist. Swbd. BJ	BJ UPS Input Room BJ17	BJ2
Contractor		Panel UDP1 Fed from Dist. Swbd. BJ	Panel UDP1 Room BJ17	BJ4
Contractor		UPS BJ/1J Bypass Swbd. Fed from Dist. Swbd. BJ	UPS BJ/1J bypass Distr. Swbd.	BJ5
Contractor		Transformer TMDP Fed from Dist. Swbd. BJ	Transformer MDP Room BJ19	BJ3
Contractor			Spare	BJ6
Govt.	Panel MDP	Panel MDP Fed from Dist. Swbd. BJ Transformer TMDP		
Govt.	Panel MDP-A	Panel MDP-A Fed from BJ Panel MDP		
Govt.	Panel PB2	Panel PB2 Fed from BJ Panel MDP		
Govt.	Panel PB1	Panel PB1 Fed from BJ Panel MDP		
Govt.	Panel LB3	Panel LB3 Fed from BJ Panel MDP		
Govt.	Panel LB2	Panel LB2 Fed from BJ Panel MDP		
Govt.	Panel BBP	Panel BBP Fed from BJ Panel MDP		
Govt.	Panel LB1	Panel LB1 Fed from BJ Panel MDP		
Govt.		Panel EM1 Fed from MCC BJ	Panel EM1 BJ Corridor	
Contractor	Transformer TEM1	Transformer TEM1 Fed from MCC BJ Feeds Panel EM1		

BJ/1J Electrical Equipment Label Schedule

LABEL INSTALLED BY	LOCATION	LABEL AT LOAD	LABEL AT BREAKER	CKT NO.
Contractor	Sub 1J 15 kV SW	Switch 1J Fed from SAC 4A		
Contractor	Transformer	Sub 1J 1000 KVA		
Contractor	Distribution Swbd. 1J	Dist. Switchboard 1J Fed From Sub 1J		
Contractor			Main Fed from Sub 1J	M1J
Contractor			Tie Fed from Panel BJ	1J/BJ
Contractor			MCC 1J Room 1J11	1J1
Contractor		1J UPS Fed from Dist. Swbd 1J Input	1J UPS Input Room BJ17	1J2
Contractor			Spare	1J3
Contractor	MCC 1J	MCC 1J Fed from Dist. Swbd. 1J		
Contractor		Panel 1LA Fed from MCC 1J	Panel 1LA Room 1J8	
Contractor		Panel 1LB Fed from MCC 1J	Panel 1LB Room 1J8	
Contractor	Panel 1LB1	Panel 1LB1 Fed from 1J Panel 1LB		
Contractor	Transformer T1LA	Transformer T1LA Fed from MCC1J Feeds Panel 1LA		
Contractor	Transformer T1LB	Transformer T1LB Fed from MCC1J Feeds Panel 1LB		
Contractor	BJ/1J UPS Bypass Dist. Swbd.	(future connection)	Maintenance Bypass Panel 1JA	
Contractor		(future connection)	Maintenance Bypass Panel BJA	
Contractor		(future connection)	UPS 1J Rm 1J12 Bypass	
Contractor		(future connection)	UPS BJ Bypass Rm BJ17	

2J/3J ELEC. EQUIPMENT IDENTIFICATION SCHEDULE

LABEL INSTALLED BY	LOCATION	LABEL AT LOAD	LABEL AT BREAKER	CKT. NO
Contractor	Sub 2J 15 kV SW	Switch 2J Fed from SAC 4B		
Contractor	Transformer	Sub 2J 1000 KVA		
Contractor	Distribution Swbd 2J	Distr. Switchboard 2J Fed from Sub 2J		
Contractor			Main Fed from Sub 2J	M2J
Contractor			Tie Fed from Sub 3J	2J/3J
Contractor		MCC 2J Fed from Dist. Swbd 2J	MCC 2J Room 2J11	2J2
Contractor		2J UPS Input Fed from Dist. Swbd 2J	2J UPS Input	2J5
Contractor		Panel MS1 Fed From Dist. Swbd 2J	Panel MS1	2J3
Contractor			Spare	2J6
Contractor		CAC16	CAC16 Rm. 2J15 Fed from Sub 2J	2J1
Contractor		TUP1	TUP1 Rm. 3J2	2J4
Contractor	Sub 3J 15 kV SW	Switch 3J Fed from SAC 4A		
Contractor	Transformer	Sub 3J 1000 KVA		
Contractor	Distribution Swbd 3J	Distribution Swbd 3J Fed from Sub 3J		
Contractor			Main Fed from Sub 3J	M3J
Contractor			Tie Fed from Sub 2J	3J/2J
Contractor		MCC 3J Fed from Sub 3J	MCC 3J Room 3J11	3J1
Contractor		3J UPS Input Fed from Dist. Swbd 3J	3J UPS Input Room 3J15	3J5
Contractor		UPS 2J/3J Bypass Swbd Fed from Dist. Swbd. 3J	UPS 2J/3J Bypass Swbd. Rm. 2J12	3J4
Contractor		XFMR HA/Pnl 2HA/Pnl 3HA Fed from Dist. Swbd. Panel 3J	Panels 2HA/3HA Rooms 2J4/3J4	3J3

2J/3J ELEC. EQUIPMENT IDENTIFICATION SCHEDULE

LABEL INSTALLED BY	LOCATION	LABEL AT LOAD	LABEL AT BREAKER	CKT. NO
Contractor			Spare	3J2
Govt.	Transformer T2LA	Transformer T2LA Fed from Panel 2HA Feeds Panel 2LA		
Govt.	Panel 2LA	Panel 2LA Fed from 3J Panel 2HA		
	UPS 2J/3J Bypass Dist. Swbd.			
Contractor			Space Future UPS 2J Bypass	
Contractor			Space Future UPS 3J Bypass	
Contractor			Space Future UPS 2JA Maint. Bypass	
Contractor			Space Future UPS 3JA Maint. Bypass	